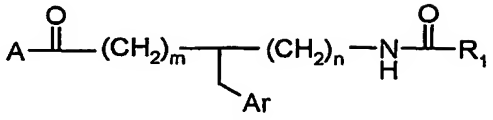
CLAIMS

1. A compound of structural formula (I):



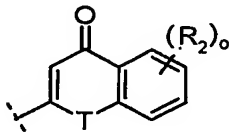
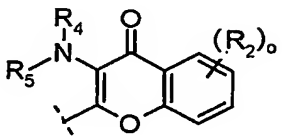
(I)

or a pharmaceutically acceptable salt or a solvate thereof, wherein

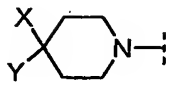
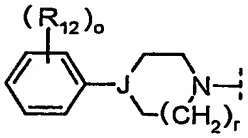
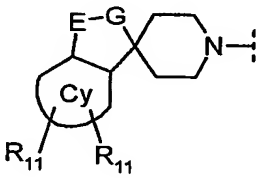
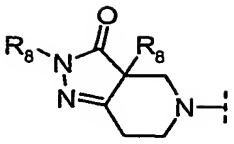
Ar is:

aryl or heteroaryl which may both be substituted;

R_1 is:

A is:

R_2 is independently:

hydrogen,
halo,
alkyl,
haloalkyl,
hydroxy,
alkoxy,

S-alkyl,
SO_2-alkyl,
O-alkenyl,
S-alkenyl,
$NR_{14}C(O)R_{14}$,
$NR_{14}SO_2R_{14}$,
$N(R_{14})_2$,
(D)-cycloalkyl,
(D)-aryl,
(D)-heteroaryl,
(D)-heterocyclyl (wherein heterocyclyl excludes a heterocyclyl containing a single nitrogen), and
wherein aryl, heteroaryl, heterocyclyl, alkyl and cycloalkyl are substituted or unsubstituted, and two adjacent R_2 may form a 4- to 7-membered ring;

R_4 and R_5 are each independently:
hydrogen,
alkyl or
(D)-cycloalkyl, or
R_4 and R_5 together with the nitrogen to which they are attached form a 5- to 8-membered ring,
wherein alkyl and cycloalkyl are unsubstituted or substituted;

R_8 is independently:
hydrogen,
alkyl,
(D)-aryl or
(D)-cycloalkyl;

R_9 is independently:
hydrogen,
alkyl,
(D)-aryl,

(D)-heteroaryl or
(D)-cycloalkyl;

R_{10} is independently:
R_9,
(D)-heterocyclyl,
(D)-$N(Y)_2$,
(D)-NH-heteroaryl or
(D)-NH-heterocyclyl,
wherein aryl, heteroaryl, alkyl, D, cycloalkyl and heterocyclyl are substituted or unsubstituted, or
two R_{10} groups together with the atoms to which they are attached form a 5- to 8-membered mono- or bi-cyclic ring system;

R_{11} is:
hydrogen,
halo,
alkyl,
alkoxy,
C≡N,
CF_3 or
OCF_3;

R_{12} is independently:
hydrogen,
hydroxy,
cyano,
nitro,
halo,
alkyl,
alkoxy,
haloalkyl,
(D)-$C(O)R_{14}$,

(D)-$C(O)OR_{14}$,
(D)-$C(O)SR_{14}$,
(D)-C(O)-heteroaryl,
(D)-C(O)-heterocyclyl,
(D)-$C(O)N(R_{14})_2$,
(D)-$N(R_{14})_2$,
(D)-$NR_{14}COR_{14}$,
(D)-$NR_{14}CON(R_{14})_2$,
(D)-$NR_{14}C(O)OR_{14}$,
(D)-$NR_{14}C(R_{14})=N(R_{14})$,
(D)-$NR_{14}C(=NR_{14})N(R_{14})_2$,
(D)-$NR_{14}SO_2R_{14}$,
(D)-$NR_{14}SO_2N(R_{14})_2$,
(D)-NR_{14}(D)-heterocyclyl,
(D)-NR_{14}(D)-heteroaryl,
(D)-OR_{14},
OSO_2R_{14},
(D)-$[O]_q$(cycloalkyl),
(D)-$[O]_q$(D)aryl,
(D)-$[O]_q$(D)-heteroaryl,
(D)-$[O]_q$(D)-heterocyclyl (wherein heterocyclyl excludes a heterocyclyl containing a single nitrogen when q=1),
(D)-SR_{14},
(D)-SOR_{14},
(D)-SO_2R_{14} or
(D)-$SO_2N(R_{14})_2$,
wherein alkyl, alkoxy, cycloalkyl, aryl, heterocyclyl and heteroaryl are substituted or unsubstituted;

R_{14} is independently:
hydrogen,
alkyl,
haloalkyl,

(D)-cycloalkyl,
(D)-phenyl,
(D)-naphthyl,
(D)-heteroaryl,
(D)-heterocyclyl (wherein heterocyclyl excludes a heterocyclyl containing a single nitrogen), and
wherein phenyl, naphthyl, heteroaryl, heterocyclyl, alkyl and cycloalkyl are substituted or unsubstituted;

X is:

alkyl,
(D)-cycloalkyl,
(D)-aryl,
(D)-heteroaryl,
(D)-heterocyclyl,
(D)-C≡N,
(D)-CON(R_9R_9),
(D)-CO_2R_9,
(D)-COR_9,
(D)-$NR_9C(O)R_9$,
(D)-$NR_9CO_2R_9$,
(D)-$NR_9C(O)N(R_9)_2$,
(D)-$NR_9SO_2R_9$,
(D)-$S(O)_pR_9$,
(D)-$SO_2N(R_9)(R_9)$,
(D)-OR_9,
(D)-$OC(O)R_9$,
(D)-$OC(O)OR_9$,
(D)-$OC(O)N(R_9)_2$,
(D)-$N(R_9)(R_9)$ or
(D)-$NR_9SO_2N(R_9)(R_9)$,
wherein aryl, heteroaryl, alkyl, D, cycloalkyl and heterocyclyl are unsubstituted or substituted;

Y is:

hydrogen,
alkyl,
(D)-cycloalkyl,
(D)-aryl,
(D)-heterocyclyl or
(D)-heteroaryl,
wherein aryl, heteroaryl, alkyl, D and cycloalkyl are unsubstituted or substituted;

Cy is benzene, pyridine or cyclohexane;

D is a bond or alkylene;

E is $CHCO_2Y$, $CHC(O)N(Y)_2$, NSO_2R_{10}, $CHN(Y)COR_{10}$, $CHN(Y)SO_2R_{10}$, $CHCH_2OY$ or $CHCH_2$heteroaryl;

G is D, CH-alkyl, O, C=O or SO_2, with the proviso that when G is O, the ring atom E is carbon;

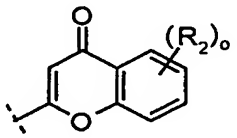
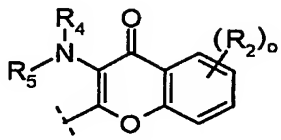
J is N or CH;
T is O or NR_4;
n is 0 - 2;
m is 0 - 2;
o is 0 - 3;
p is 0 - 2;
q is 0 or 1;
r is 1 or 2.

2. The compound of claim 1, wherein

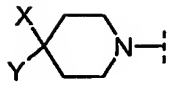
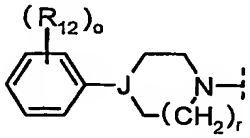
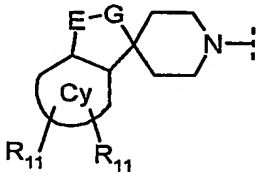
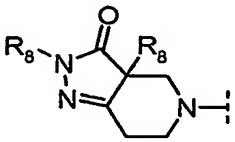
Ar is:

aryl which may be substituted with one to three substituents independently selected from the group consisting of cyano, nitro, perfluoroalkoxy, halo, alkyl, (D)-cycloalkyl, alkoxy and/or haloalkyl;

R_1 is:

A is:

R_2 is independently:

hydrogen,
hydroxy,
halo,
alkyl,
alkoxy,
S-alkyl,
SO_2-alkyl,
O-alkenyl,
S-alkenyl,
haloalkyl or
(D)-cycloalkyl;

R_4 and R_5 are each independently:

hydrogen,
alkyl or
cycloalkyl, or
R_4 and R_5 together with the nitrogen to which they are attached form a 5- to 7-membered ring which may contain an additional heteroatom selected from O, S and NR_6;

R_6 is independently:

hydrogen,
alkyl,
C(O)alkyl,
(D)-aryl or
(D)-cycloalkyl;

R_8 is independently:

hydrogen,
alkyl or
(D)-aryl;

R_9 is independently:

hydrogen,
alkyl or
(D)-cycloalkyl;

R_{10} is R_9;

R_{11} is:

hydrogen,
halo,
alkyl,
alkoxy or
C≡N;

R_{12} is independently:

hydrogen,
hydroxy,
cyano,
nitro,
halo,
alkyl,
alkoxy,
haloalkyl,
(D)-C(O)-heterocyclyl,
(D)-$C(O)N(R_{14})_2$,
(D)-$N(R_{14})_2$,
(D)-$NR_{14}COR_{14}$,
(D)-$NR_{14}CON(R_{14})_2$,
(D)-$NR_{14}C(O)OR_{14}$,
(D)-$NR_{14}C(R_{14})=N(R_{14})$,
(D)-$NR_{14}C(=NR_{14})N(R_{14})_2$,
(D)-$NR_{14}SO_2R_{14}$ or
(D)-$NR_{14}SO_2N(R_{14})_2$;

R_{14} is independently:

hydrogen,
halo,
alkyl,
(D)-cycloalkyl,
alkoxy or
phenyl;

X is:

alkyl,
(D)-cycloalkyl,
(D)-aryl,

(D)-heteroaryl,
(D)-heterocyclyl,
(D)-$NHC(O)R_9$,
(D)-CO_2R_9 or
(D)-$CON(R_9R_9)$;

Y is:

hydrogen,
alkyl,
(D)-cycloalkyl,
(D)-aryl,
(D)-heterocyclyl or
(D)-heteroaryl;

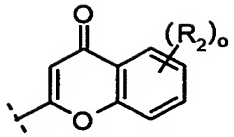
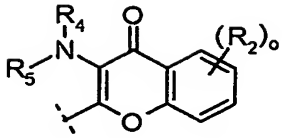
Cy is benzene or pyridine;
D is a bond or C_1 - C_4-alkylene;
E is NSO_2R_{10}, $CHN(Y)COR_{10}$ or $CHN(Y)SO_2R_{10}$;
G is D or CH-alkyl;
J is N or CH;
T is O or NR_4;
n is 0 or 1;
m is 0 or 1;
o is 0, 1 or 2;
r is 1.

3. The compound of claim 1 or 2, wherein

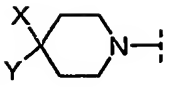
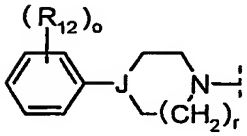
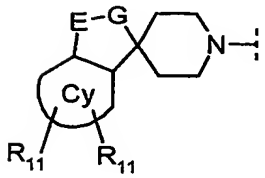
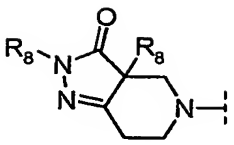
Ar is:

phenyl or naphthyl which may be substituted with one or two substituents independently selected from the group consisting of halo, alkyl, alkoxy and/or haloalkyl;

R_1 is:

A is:

R_2 is independently:

hydrogen,
hydroxy,
alkoxy,
S-alkyl,
SO_2-alkyl,
O-alkenyl,
S-alkenyl,
halo or
alkyl;

R_4 and R_5 are each independently:

hydrogen or
alkyl, or
R_4 and R_5 together with the nitrogen to which they are attached form a 5- to 6-membered ring optionally containing an additional oxygen atom;

R_6 is hydrogen;

R_8 is independently:

alkyl or
(D)-aryl;

R_9 is alkyl;

R_{10} is R_9;

R_{11} is:
hydrogen,
halo and
C_1 - C_4-alkyl;

R_{12} is independently:
cyano,
nitro,
halo,
alkyl,
(D)-C(O)-heterocyclyl,
(D)-$N(R_{14})_2$,
(D)-$NR_{14}COR_{14}$,
(D)-$NR_{14}CON(R_{14})_2$,
(D)-$NR_{14}C(O)OR_{14}$ or
(D)-$NR_{14}SO_2R_{14}$;

R_{14} is independently:
hydrogen,
halo,
alkyl,
alkoxy or
phenyl;

X is:
alkyl

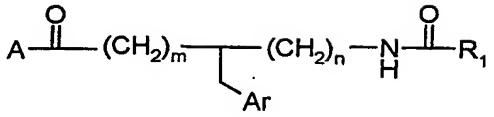
(D)-cycloalkyl,
(D)-heterocyclyl,
(D)-NHC(O)R_9 or
(D)-CON(R_9R_9);

Y is:

hydrogen,
alkyl,
(D)-cycloalkyl or
(D)-heterocyclyl;

Cy is benzene;
D is a bond or CH_2;
E is NSO_2R_{10};
G is D;
J is N or CH;
T is O or NR_4;
n is 0;
m is 0;
o is 0 or 1;
p is 0, 1 or 2;
q is 0 or 1;
r is 1.

4. A compound of structural formula (II):



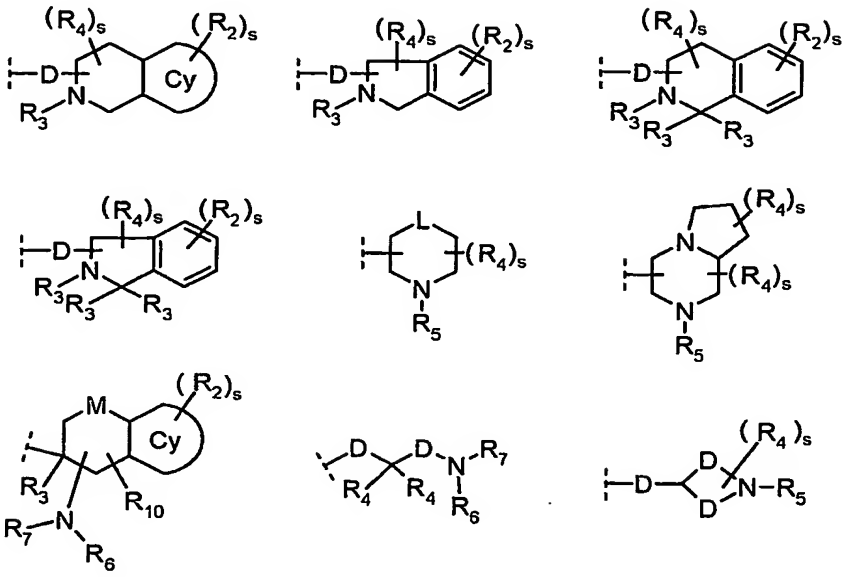
(II)

or a pharmaceutically acceptable salt or a solvate thereof, wherein

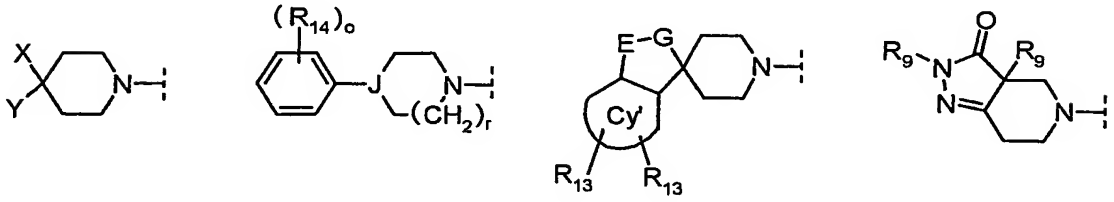
Ar is:

aryl or heteroaryl which may both be substituted;

R_1 is:



A is:



R_2 is independently:

hydrogen,
halo,
alkyl,
haloalkyl,
(D)-cycloalkyl,
(D)-aryl,
(D)-heteroaryl,

(D)-heterocyclyl (wherein heterocyclyl excludes a heterocyclyl containing a single nitrogen), and

wherein aryl, heteroaryl, heterocyclyl, alkyl and cycloalkyl are substituted or unsubstituted;

R_3 is independently:

hydrogen,
alkyl,
SO_2alkyl,
SO_2aryl,
C(O)alkyl,
(D)-aryl or
cycloalkyl;

R_4 is independently:

hydrogen,
alkyl,
(D)-aryl,
(D)-heteroaryl,
(D)-$N(R_6)_2$,
(D)-$NR_6C(O)$alkyl,
(D)-NR_6SO_2alkyl,
(D)-$SO_2N(R_6)_2$,
(D)-$(O)_v$alkyl,
(D)-$(O)_v$(D)NR_6COR_6,
(D)-$(O)_v$(D)$NR_7SO_2R_7$,
(D)-$(O)_v$-heterocyclyl or
(D)-$(O)_v$(alkyl)-heterocyclyl;

R_5 is independently:

hydrogen,
alkyl,
(D)-phenyl,
C(O)alkyl,

C(O)phenyl,
SO_2-alkyl or
SO_2-phenyl;

R_6 and R_7 are each independently:
hydrogen,
alkyl or
cycloalkyl, or
R_6 and R_7 together with the nitrogen to which they are attached form a 5- to 8-membered ring,
wherein alkyl and cycloalkyl are unsubstituted or substituted;

R_9 is independently:
hydrogen,
alkyl,
(D)-aryl or
cycloalkyl;

R_{10} is hydrogen or alkyl;

R_{11} is independently:
hydrogen,
alkyl,
(D)-aryl,
(D)-heteroaryl or
(D)-cycloalkyl;

R_{12} is independently:
R_{11},
(D)-heterocyclyl,
(D)-$N(Y)_2$,
(D)-NH-heteroaryl or
(D)-NH-heterocyclyl,

wherein aryl, heteroaryl, alkyl, D, cycloalkyl and heterocyclyl are unsubstituted or substituted, or

two R_{12} groups together with the atoms to which they are attached form a 5- to 8-membered mono- or bicyclic ring system;

R_{13} is:

hydrogen,
halo,
alkyl,
alkoxy,
C≡N,
CF_3 or
OCF_3;

R_{14} is independently:

hydrogen,
hydroxy,
cyano,
nitro,
halo,
alkyl,
alkoxy,
haloalkyl,
(D)-$C(O)R_{16}$,
(D)-$C(O)OR_{16}$,
(D)-$C(O)SR_{16}$,
(D)-C(O)-heteroaryl,
(D)-C(O)-heterocyclyl,
(D)-$C(O)N(R_{16})_2$,
(D)-$N(R_{16})_2$,
(D)-$NR_{16}COR_{16}$,
(D)-$NR_{16}CON(R_{16})_2$,
(D)-$NR_{16}C(O)OR_{16}$,

(D)-$NR_{16}C(R_{16})=N(R_{16})$,
(D)-$NR_{16}C(=NR_{16})N(R_{16})_2$,
(D)-$NR_{16}SO_2R_{16}$,
(D)-$NR_{16}SO_2N(R_{16})_2$,
(D)-NR_{16}(D)-heterocyclyl,
(D)-NR_{16}(D)-heteroaryl,
(D)-OR_{16},
OSO_2R_{16},
(D)-$[O]_q$(cycloalkyl),
(D)-$[O]_q$(D)aryl,
(D)-$[O]_q$(D)-heteroaryl,
(D)-$[O]_q$(D)-heterocyclyl (wherein heterocyclyl excludes a heterocyclyl containing a single nitrogen when q=1),
(D)-SR_{16},
(D)-SOR_{16},
(D)-SO_2R_{16} or
(D)-$SO_2N(R_{16})_2$,
wherein alkyl, alkoxy, cycloalkyl, aryl, heterocyclyl and heteroaryl are substituted or unsubstituted;

R_{16} is independently:
hydrogen,
alkyl,
haloalkyl,
(D)-cycloalkyl,
(D)-aryl,
(D)-heteroaryl,
(D)-heterocyclyl (wherein heterocyclyl excludes a heterocyclyl containing a single nitrogen), and
wherein aryl, heteroaryl, heterocyclyl, alkyl and cycloalkyl are substituted or unsubstituted;

Cy is:

aryl,
heteroaryl,
heterocyclyl or
carbocyclyl;

X is:

alkyl,
(D)-cycloalkyl,
(D)-aryl,
(D)-heteroaryl,
(D)-heterocyclyl,
(D)-C≡N,
(D)-CON($R_{11}R_{11}$),
(D)-CO_2R_{11},
(D)-COR_{11},
(D)-$NR_{11}C(O)R_{11}$,
(D)-$NR_{11}CO_2R_{11}$,
(D)-$NR_{11}C(O)N(R_{11})_2$,
(D)-$NR_{11}SO_2R_{11}$,
(D)-$S(O)_pR_{11}$,
(D)-$SO_2N(R_{11})(R_{11})$,
(D)-OR_{11},
(D)-$OC(O)R_{11}$,
(D)-$OC(O)OR_{11}$,
(D)-$OC(O)N(R_{11})_2$,
(D)-$N(R_{11})(R_{11})$ or
(D)-$NR_{11}SO_2N(R_{11})(R_{11})$,
wherein aryl, heteroaryl, alkyl, D, cycloalkyl and heterocyclyl are unsubstituted or substituted;

Y is:

hydrogen,
alkyl,
(D)-cycloalkyl,

(D)-aryl,
(D)-heterocyclyl or
(D)-heteroaryl,
wherein aryl, heteroaryl, alkyl, D and cycloalkyl are unsubstituted or substituted;

Cy' is benzene, pyridine or cyclohexane;

D is a bond or alkylene;

E is $CHCO_2Y$, $CHC(O)N(Y)_2$, NSO_2R_{10}, $CHN(Y)COR_{12}$, $CHN(Y)SO_2R_{12}$, $CHCH_2OY$ or $CHCH_2$heteroaryl;

G is D, CH-alkyl, O, C=O or SO_2 with the proviso that when G is O, the ring atom E is carbon;

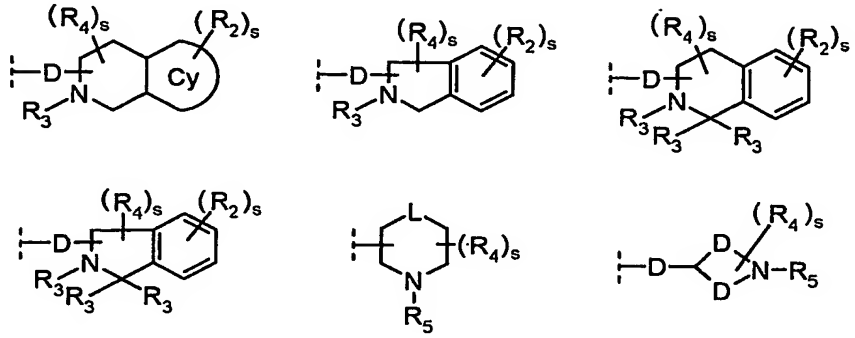
J is N or CH;
L is O, S or NR_5;
M is a bond, O, $S(O)_u$, NR_5 or CH_2;
n is 0 - 2, unless m is 0, then n is 1 or 2;
m is 0 - 2, unless n is 0, then m is 1 or 2;
o is 0 - 3;
p is 0 - 2;
q is 0 or 1;
r is 1 or 2;
s is 0 - 5;
v is 0 or 1;
u is 0 - 2.

5. The compound according to claim 4, wherein

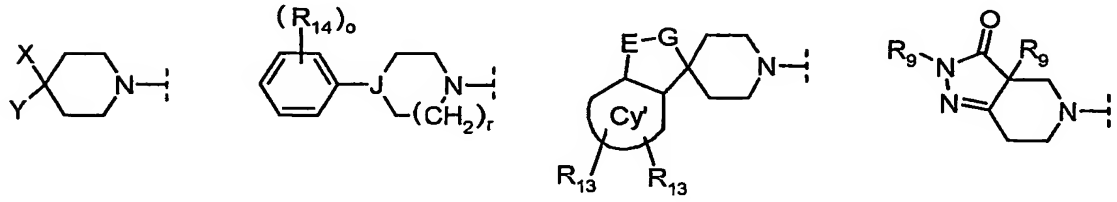
Ar is:

aryl which may be substituted with one to three substituents independently selected from the group consisting of cyano, nitro, perfluoroalkoxy, halo, alkyl, (D)-cycloalkyl, alkoxy and/or haloalkyl;

R_1 is:



A is:



R_2 is independently:

hydrogen,
halo,
alkyl,
haloalkyl,
alkoxy or
(D)-cycloalkyl;

R_3 is independently:

hydrogen or
alkyl;

R_4 is independently:
hydrogen,
alkyl,
(D)-aryl,
(D)-heteroaryl,
(D)-$N(R_6)_2$,
(D)-$NR_6C(O)$alkyl or
(D)-NR_6SO_2alkyl;

R_5 is independently:
hydrogen or
alkyl;

R_6 is independently:
hydrogen,
alkyl or
cycloalkyl;

R_9 is hydrogen, alkyl or (D)-aryl;

R_{10} is hydrogen or C_1 - C_4 alkyl;

R_{11} is independently:
hydrogen or
alkyl;

R_{12} is:
hydrogen or
alkyl;

R_{13} is:
hydrogen,
halo,

alkyl,
alkoxy or
C≡N;

R_{14} is independently:
hydrogen,
hydroxy,
cyano,
nitro,
halo,
alkyl,
alkoxy,
haloalkyl,
(D)-C(O)-heterocyclyl,
(D)-$C(O)N(R_{16})_2$,
(D)-$N(R_{16})_2$,
(D)-$NR_{16}COR_{16}$,
(D)-$NR_{16}CON(R_{16})_2$,
(D)-$NR_{16}C(O)OR_{16}$,
(D)-$NR_{16}C(R_{16})=N(R_{16})$,
(D)-$NR_{16}C(=NR_{16})N(R_{16})_2$,
(D)-$NR_{16}SO_2R_{16}$ or
(D)-$NR_{16}SO_2N(R_{16})_2$;

R_{16} is:
hydrogen,
halo,
alkoxy,
alkyl,
(D)-cycloalkyl or
phenyl;

Cy is aryl;

X is:

alkyl,
(D)-cycloalkyl,
(D)-aryl,
(D)-heteroaryl,
(D)-heterocyclyl,
(D)-$NHC(O)R_{11}$,
(D)-$CON(R_{11}R_{11})$ or
(D)-CO_2R_{11};

Y is:

hydrogen,
alkyl,
(D)-cycloalkyl,
(D)-aryl,
(D)-heterocyclyl or
(D)-heteroaryl;

Cy' is benzene or pyridine;

D is a bond or C_1 - C_4 alkylene;

E is NSO_2R_{10}, $CHN(Y)COR_{12}$ or $CHN(Y)SO_2R_{12}$;

G is D or CH alkyl;

J is CH or N;

L is NR_5;

M is a bond or CH_2;

n is 0 or 1, unless m is 0, then n is 1;

m is 0 or 1, unless n is 0, then m is 1;

o is 0, 1 or 2;

p is 0;

q is 0;

r is 1;

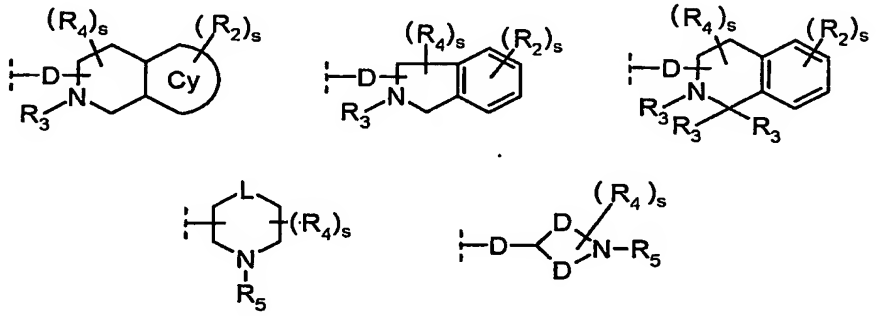
s is 0, 1, 2 or 3.

6. The compound according to claim 4 or 5, wherein

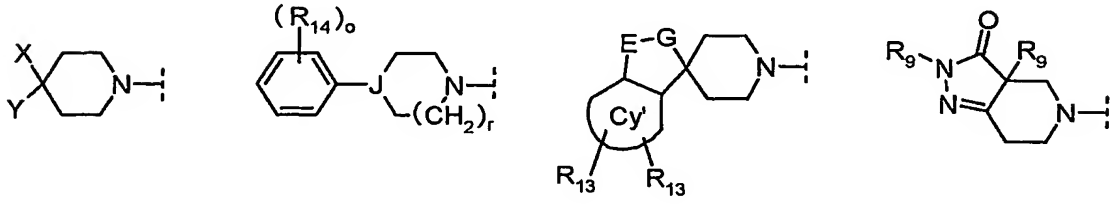
Ar is:

phenyl or naphthyl which may be substituted with one or two substituents independently selected from the group consisting of cyano, perfluoroalkoxy, halo, alkyl, (D)-cycloalkyl, alkoxy and/or haloalkyl;

R_1 is:



A is:



R_2 is:

hydrogen,
halo or
alkyl;

R_4 is hydrogen;

R_5 is hydrogen;

R_9 is independently:
hydrogen or
(D)-aryl;

R_{10} is independently:
hydrogen,
methyl or
ethyl;

R_{11} is independently:
hydrogen or
C_1 - C_6 alkyl;

R_{13} is:
hydrogen,
methyl or
ethyl;

R_{14} is independently:
cyano,
nitro,
halo,
alkyl,
(D)-C(O)-heterocyclyl,
(D)-$C(O)N(R_{16})_2$,
(D)-$N(R_{16})_2$,
(D)-$NR_{16}COR_{16}$,
(D)-$NR_{16}CON(R_{16})_2$,
(D)-$NR_{16}C(O)OR_{16}$ or
(D)-$NR_{16}SO_2R_{16}$;

R_{16} is independently:
hydrogen,

halo,
alkyl,
alkoxy or
phenyl;

Cy is benzene;

X is:
alkyl,
(D)-cycloalkyl,
(D)-heterocyclyl,
(D)-$NHC(O)R_{11}$ or
(D)-$CON(R_{11}R_{11})$;

Y is:
alkyl,
(D)-cycloalkyl or
(D)-heterocyclyl;

Cy' is benzene;
D is a bond or CH_2;
E is NSO_2R_{10};
G is D;
J is CH or N;
L is NR_5;
n+m=1;
o is 1;
r is 1;
s is 0 or 1.

7. The compound of any of claims 1 to 6 for use as a medicament.

8. Use of the compound of any of claims 1 to 6 for the preparation of a medicament for the treatment or prevention of disorders, diseases or conditions responsive to the inactivation or activation of the melanocortin-4 receptor in a mammal.

9. Use according to claims 8 for the preparation of a medicament for the treatment or prevention of cancer cachexia.

10. Use according to claims 8 for the preparation of a medicament for the treatment or prevention of muscle wasting.

11. Use according to claims 8 for the preparation of a medicament for the treatment or prevention of anorexia.

12. Use according to claims 8 for the preparation of a medicament for the treatment or prevention of anxiety and/or depression.

13. Use according to claims 8 for the preparation of a medicament for the treatment or prevention of obesity.

14. Use according to claims 8 for the preparation of a medicament for the treatment or prevention of diabetes mellitus.

15. Use according to claims 8 for the preparation of a medicament for the treatment or prevention of male or female sexual dysfunction.

16. Use according to claims 8 for the preparation of a medicament for the treatment or prevention of erectile dysfunction.

17. A pharmaceutical composition which comprises a compound of any of claims 1 to 6 and a pharmaceutically acceptable carrier.